REMARKS

The Examiner is thanked for the due consideration given the application.

Claims 1-7 and 8-15 are pending in the application. Claim 8 has been canceled and its subject matter has been generally incorporated into claim 1. Claims 9 and 10 have been amended to not depend on canceled claim 8. Claims 12-15 are new. Support for new claim 12 can be found in the specification at page 15, lines 1-4. Support for new claim 13 can be found in the specification at page 6, lines 6-8, page 8, lines 1-3 and page 9, lines 24-28. Support for new claim 14 can be found in the specification at page 6, line 32 to page 7, line 14. Support for new claim 15 can be found in the specification at page 7, lines 1-9.

No new matter is believed to be added to the application by this amendment.

Claim Objections

Claim 9 is objected to as failing to have full antecedent basis. It is believed that claim 9 in the instant claims has full antecedent basis.

Rejection Under 35 USC §102(b)

Claims 1-11 have been rejected under 35 USC §102(b) as being anticipated by ACKER (U.S. Patent 6,427,314). This rejection is respectfully traversed.

The present invention pertains to a device for measuring the current which circulates through an electrical circuit. Such a device can be used to evaluate the structure of an electrical circuit or to verify if there is no breakage, i.e., shorts, in the track of the circuit, or to measure the power consumed by a component of the circuit (see page 1, lines 21-28 of the specification).

The device of the present invention is illustrated, by way of example, in Figure 1 of the application, which is reproduced below.

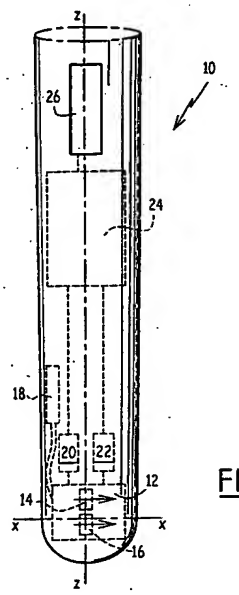


FIG.1

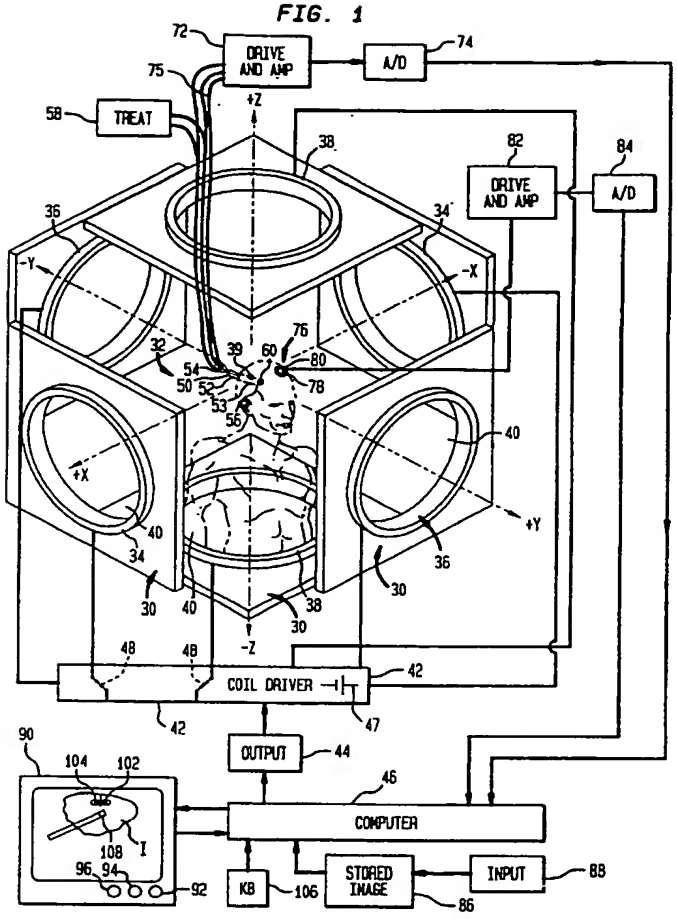
Figure 1 shows a probe 12 that includes two sensors 14 and 16 having selected measurement axes (see arrow) which are parallel and offset relative to each other. The Sensor 14 measures a magnetic field B_{x1} and the sensor 16 measures a magnetic field B_{x2}. The sensor 14 is positioned along the Z axis

at a position Z_1, and the sensor 16 is positioned along the same axis at a position Z_2. The processing chain of the device of the present invention is adapted to determine the value of the current Jy flowing through the electrical circuit in the direction Y-Y based on the ratio:

$$\frac{dB_x}{dz} = \frac{B_{x2} - B_{x1}}{z_2 - z_1},$$ as is discussed at pages 6 and 7 of the specification.

ACKER pertains to an apparatus for determining the position and the orientation of a probe 60 within the body of a medical patient (column 1, lines 1821), The apparatus illustrated in Figure 1 of ACKER, illustrated below, includes three pairs of Helmholtz coils 34, 36 and 38 adapted to generate a magnetic field along each of the X Y and Z axes.

FIG. 1



Coils 34 (X axis), coils 36 (Y axis) and coils 38 (Z axis) are in turn activated to generate a magnetic field, The coils are actuated separately at different modes that are a forward mode, a gradient or a reverse configuration mode (Column 12, lines 43-48).

The spatial distribution of the magnetic field along each axis is well-known. For example, when the coil 34 is activated in a forward mode, it generates a magnetic field. The spatial distribution of this magnetic field along the X axis is represented in Figure 3 and its spatial distribution along the y

axis is represented in Figure 4, reproduced below (column 12, line 53 to column, 13, line 7, and column 8, lines 58-62).

FIG. 3

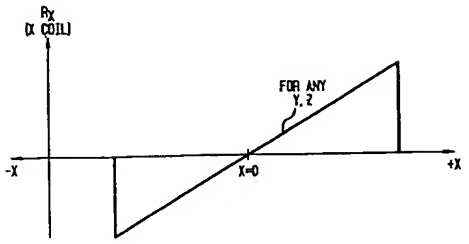
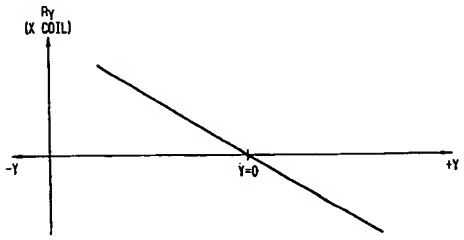


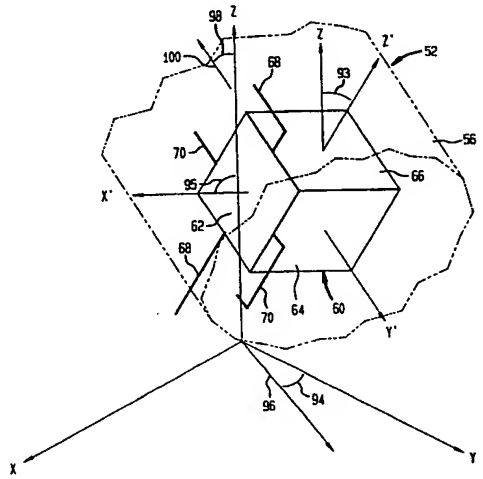
FIG. 4



The probe 60 is introduced within the patient body. The body of the patient is positioned within the sensing volume 32, i.e., between the Helmholtz coils 34, 36, 38.

The probe 60 includes means for measuring the magnetic field. According to a first embodiment illustrated in Figure 2 of ACKER, reproduced below, these measuring means are Hall sensors 62, 64, and 66.

FIG. 2



According to a second embodiment illustrated in Figures 9 and 10 of ACKER, reproduced below, these measuring means are elongated bars 250 made of magnetoresistive material. The bars are sensitive to a magnetic field having the same direction as the direction of the bars (column 23, lines 33-38).

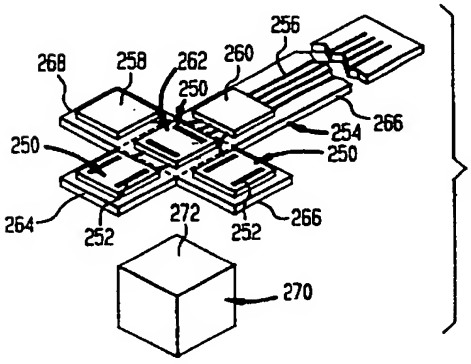
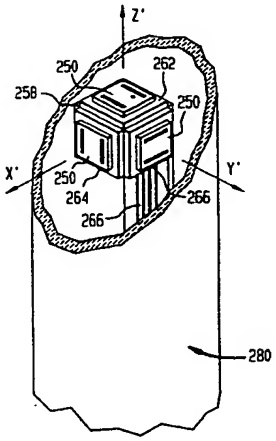


FIG. 9

FIG. 10



The apparatus of ACKER includes a computer adapted to determine the position of the probe 60 according to the magnetic field measured by the elongated bars. The position of the probe 60 is determined by comparing the magnetic field measured by the bars 250 and a map showing the variation of the magnetic field along each axis X, V and 7 when one coil is activated. Such maps are shown in Figures 3 and 4.

ACKER fails to disclose "processing means comprising means for evaluating a difference between the field values measured by two magnetoresistive or magnetoinductive sensors having selected measurement axes which are parallel and which are offset

transversally relative to each other; and means for evaluating a ratio between said difference and a distance separating the two magnetoresistive or magnetoinductive sensors," as is set forth in claim 1 of the present invention.

In ACKER, the computer calculates the angles between the X, Y, Z axes of the apparatus illustrated figure 1, and the X', Y', Z' axes which are the axes of the sensors (see Figures 2 and 10). These angles are called pitch, roll and yaw (column 15, lines 40-43 and lines 50-51). These angles are determined from the normalized value of the magnetic field measured by each sensor according to each axis. For example $H'_{x',x}$ is a normalized magnetic field measured by the sensing element directed along the X' axis when the coils 34 (X axes) are activated (see column 15, line 20).

Accordingly, the computer of ACKER does not evaluate the ratio between a field difference and a distance, as is claimed in claim 1 of the present invention. ACKER thus fails to anticipate claim 1 of the present invention. Claims depending upon claim 1 are patentable for at least the above reasons.

This rejection is believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statement filed April 7, 2006 and for making an initialed PTO-1449 Form of record in the application.

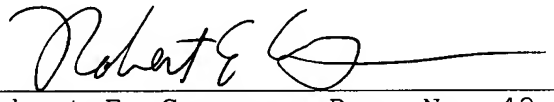
Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

The objections and rejection are believed to have been overcome, obviated or rendered moot and that no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



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